

Mosby's Nursing Video Skills

Procedure Guideline for Preparing Injections from a Vial

1. To prepare an injection from a vial, first verify the health care provider's orders.
2. Perform hand hygiene, and prepare your supplies.
3. Prepare medications:
 - A. If you are using an automated medication dispensing system, log on and access the patient's profile.
 - B. When preparing medications, it is important to avoid becoming distracted. Follow your agency's "No Interruption Zone" policy. Prepare medications for only one patient at a time.
 - C. Select a vial of the prescribed drug from the medication cart or automated dispensing system. Compare the name of the drug on the label of the vial with the name in the MAR.
 - D. Check the expiration date and drug concentration or dose on the vial. Calculate the correct volume to withdraw. Double-check your calculation. Ask another registered nurse to check your calculation if needed.
 - E. Check agency policy to note which high alert medications require validation by a second RN.
4. Prepare the vial containing a solution:
 - A. Remove the cap on an unused vial to expose the rubber seal. If a multidose vial has been used before, the cap will have been removed already. Firmly wipe the surface of the rubber seal with an alcohol swab. Allow it to dry.
 - B. Select a syringe, and attach a needle or needleless access device. If the syringe is capped, remove the cap first. A filter needle may be needed to withdraw certain medications from the vial. Review your agency's policy or the drug insert to determine if it is necessary to use a filter needle.
 - C. Pull back on the plunger to draw an amount of air into the syringe equivalent to the volume of medication to be aspirated from the vial.
 - D. With the vial on a flat surface, apply pressure to insert the tip of the needle or needleless device through the center of the rubber seal.
 - E. Inject the air you drew into the syringe into the air space of the vial, firmly holding the plunger to prevent its being forced backward by air pressure in the vial.
 - F. Hold the vial with your nondominant hand. Hold the syringe barrel and plunger with your dominant hand. Invert the vial securing the plunger to continue counteracting pressure within the vial. Keep the tip of the needle or needleless device below the level of the fluid.
 - G. Allow the air pressure from the vial to fill the syringe gradually. If necessary, pull back slightly on the plunger to hasten the process.
 - H. When the level of medication in the syringe reaches the desired volume, position the tip of the needle or needleless device into the air space of the vial. Tap the syringe barrel gently to dislodge any air bubbles. If air remains at the top of the syringe, eject any remaining air into the vial.
 - I. Recheck the volume in the syringe.

- J. Finally, remove the needle or needleless access device from the vial.
 - K. Hold the syringe vertically, needle up, at eye level, and ensure the correct volume and the absence of air bubbles. Remove the remaining air by tapping the barrel to dislodge the air bubbles. If air remains, draw back slightly on the plunger, and then push it upward to eject the air. Do not eject any fluid. Recheck the volume of the drug in the syringe. Cover the needle with a safety sheath or cap.
 - L. If you need to inject medication into the patient's tissue, change the needle to the appropriate gauge and length according to the route of medication administration.
 - M. If you are preparing the medication away from the patient's bedside, clearly label the syringe with the name of the medication and the dose in the syringe.
 - N. For a new multidose vial, write the date on which it was opened and your initials on the vial label. Remove the cap and swab the rubber seal with an alcohol swab. Let it dry.
 - O. If a multidose vial is already open, wipe the surface of the rubber seal with an alcohol swab and let it dry.
 - P. Discard single dose vials after use even if there is medication remaining in the vial.
5. Prepare a vial containing a powder (reconstituting medications):
- A. Remove the cap on the vial of powdered medication and the cap on a vial of the proper diluent. Be sure to check the manufacturer's guideline for the correct diluent and volume of diluent to use, and if use of a filter needle is recommended. Wipe both rubber seals with an alcohol swab, and allow the alcohol to dry.
 - B. Use a needle or needleless device to draw the volume of diluent suggested by the manufacturer into the syringe as you would medication from a vial.
 - C. To mix the diluent with a powdered medication, insert the tip of the needle or the needleless device through the center of the rubber seal of the vial of powdered medication. Inject the measured diluent into the vial containing the powder. Withdraw and dispose of the syringe or access device in a puncture proof container.
 - D. Roll the vial between the palms of your hands to mix the powder and diluents thoroughly. Do not shake the vial.
 - E. The reconstituted medication in the vial is now ready to be drawn into a new syringe. Read the label carefully to determine the concentration of the drug.
 - F. Wipe off the top with an alcohol swab and allow it to dry. Draw up the appropriate volume of medication based on its concentration in the reconstituted formulation into a syringe.
 - G. Some medications are now available in vials that contain both the medication and diluent separated by a gasket.
 - a. To combine, press down on the plastic activator to force the diluent into the lower compartment.
 - b. Remove the top and gently agitate the vial to mix the solution.
 - c. Swab the gasket with alcohol. Then insert the needle through the center of the stopper.
 - d. Invert the vial and withdraw the dose.
6. Again compare the label of the prepared medication with the MAR, computer screen, or printout.

7. Remember, if you are drawing up medication away from the patient's bedside, label the syringe with the name of the medication and the amount of medication or dose in the syringe.
8. Dispose of used supplies. Place the used vials and used needle or needleless device in a puncture-proof, leak-proof container. Clean your work area, and perform hand hygiene.